



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|-------------------------|------------------|
| 10/009,516 | 03/04/2002 | Walter John King | 82341 | 4820 |
| 20529 | 7590 | 03/09/2004 | EXAMINER | |
| NATH & ASSOCIATES | | | OLESEN, KAJ K | |
| 1030 15th STREET | | | ART UNIT | PAPER NUMBER |
| 6TH FLOOR | | | 1753 | |
| WASHINGTON, DC 20005 | | | DATE MAILED: 03/09/2004 | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/009,516 | KING, WALTER JOHN |
| | Examiner | Art Unit |
| | Kaj Olsen | 1753 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 1 is indefinite because it is drawn to a carbon monoxide sensor, but doesn't appear to have any set forth structure drawn to an actual sensor, other than the vaguely defined "sensor means" (means for what?).
4. In claim 12, it is unclear how to interpret the term "gaseous test substrate". The term "substrate" would appear to imply some solid structure, but it isn't clear if that is what the applicant meant. The examiner suggests the use of the term "sample" as an alternative.
5. In claim 12, it is unclear what "thereof" is referring back to.
6. In claim 12, it is unclear how to interpret the phrase "the *residue* of the test substrate" (emphasis added). What is "residue" specifically referring back to?

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 9, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over CAPLUS abstract for Yarym-Agaeva et al (Gigiena Truda I Professional'nye Zabolevaniya (1986), (9), pp. 55 and 56) with evidence from Cooke (USP 5,080,867).

9. Yarym-Agaeva discloses a carbon monoxide sensing apparatus comprising a pre-treatment means of a lead acetate solution that absorbs the contaminant H₂S. Although Yarym-Agaeva does not specifically state that the lead acetate functions as a catalytic means for converting the H₂S, Cooke evidences that lead acetate does in fact function as a catalyst for the conversion of H₂S into other materials (col. 5, lines 17-22). Hence the cotton impregnated with lead acetate is inherently functioning both as an absorbent and as a catalytic means. Although Yarym-Agaeva does not explicitly disclose that the solvent for the solution is aqueous, water is a notoriously obvious choice of solvent because it is safe, readily available, and inexpensive. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize water as the solvent for the absorbent because it is safe, readily available, and inexpensive. Yarym-Agaeva also does not explicitly specify a temperature, but ambient temperature is an obvious choice because it would not require an external heating or cooling source thereby minimizing cost and reducing complexity. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize ambient temperature for the catalytic means in order to minimize cost and reduce complexity. Alternatively, claim 1 does not require the use of ambient temperature, but merely that the catalytic means be reactive at room temperature which lead acetate inherently appears to be.

Art Unit: 1753

10. With respect to the presence of “other water-retention substances”, barium chloride would appear to read on this term because ionic materials added to water will lower vapor pressures and increase boiling points.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yarym-Agaeva in view of Cooke.

12. Yarym-Agaeva discloses all the limitations of the claim, but did not explicitly identify having the pre-treatment and sensor means in separate chambers. However, Cooke discloses that the hydrogen sulfide is removed in a separate chamber 12 from where the desired product is analyzed 36 (col. 4, line 50 through col. 5, line 22). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to place the pre-treatment means separate from the sensor means as shown by Cooke for the sensor of Yarym-Agaeva in order to ensure that the contaminating substance is removed before it has a chance to affect the sensor means measurement, thereby improving sensing accuracy.

13. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yarym-Agaeva in view of Schneider et al (USP 5,667,653) with evidence from Cooke.

14. Claims 1-10 and 12 are rejected in the alternative under 35 U.S.C. 103(a) as being unpatentable over Schneider in view of Yarym-Agaeva with or without the teaching of Cooke.

15. Yarym-Agaeva discloses all the limitations of the claims, but did not explicitly disclose the use of an electrochemical sensor for the CO, but instead relies on the use of photometric measurement (see abstract). Cooke evidences that photometric gas detectors can be expensive and complicated (col. 1, lines 40-45). Schneider teaches in an alternate sensor that electrochemical sensors are a well-known, low-cost means for monitoring gases such as CO. See

Art Unit: 1753

abstract and col. 1. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Schneider for the detector of Yarym-Agaeva in order to avoid the cost and complexity of photometric detectors. Schneider teaches all the claimed features of the gas sensor electrolyte and electrodes. See col. 5, line 45 through col. 6, line 67.

16. Alternatively, Schneider teaches all the limitations of the claimed sensors means of claims 1, 3-10 and 12, but does not explicitly set forth the claimed pretreatment means. However, the sensor of Schneider can also be utilized for the detection of H₂S in addition to CO (col. 12, lines 8-37) indicating that H₂S could be an contaminant when a measurement of CO is desired. However, Yarym-Agaeva already set forth a means for removing the influence of H₂S on the measurement of CO (see rejections above). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the pre-treatment and catalytic means of Yarym-Agaeva for the sensor of Schneider to ensure the measurement of CO is not affected by the presence of H₂Sm, thereby ensuring greater measurement accuracy.

17. With respect to claim 2, Cooke already rendered obvious the separation of the pre-treatment means from the sensor means.

18. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yarym-Agaeva or Schneider and Yarym-Agaeva as applied to claim 1 above, and further in view of Bao et al (USP 5,985,673).

19. The references set forth all the limitations of the claims, but did not explicitly disclose the use of a porous barrier to exclude airborne particulates. Bao discloses in an alternate sensor the use of filters 214, 215 for removing particulate material from a gas stream (col. 22, lines 28-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Bao for the apparatuses of Yarym-Agaeva or Schneider in view of Yarym-Agaeva in order to prevent particulate contamination of the gas sensors.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Thursday from 6:30 A.M. to 4:00 P.M. and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kaj Olsen Ph.D.
Primary Examiner
AU 1753
March 3, 2004